

Size matters but when, why and for whom?

Pack size of tobacco products, including factory-made cigarettes and loose tobacco, is an important but neglected aspect of tobacco control policy. Understanding the nature of the relationship between pack size and consumption, as well as the underlying mechanisms, is key for informing effective policy and reducing smoking prevalence.

In our *Addiction* Debate paper, we propose that cigarette pack sizes should be capped due to observational evidence that larger sizes are associated with increased consumption which, in turn, is negatively associated with smoking cessation [1]. We argue that pack size requires the attention of policymakers, because existing freedom to increase size may be exploited by the tobacco industry to counter tax increases and other tobacco control measures [2,3]. The four commentaries [4–7] reinforce our view that cigarette pack size is an important but neglected focus for policy. They also raise some other considerations that could inform regulation and several additional foci for tobacco control.

We focused on factory-made (FM) cigarettes in our original paper. Moodie and Stead [6] make the important point that loose tobacco package size should also be considered, and highlight the greater range and sizes in which it is sold. Growth of loose tobacco use is driven in part by lower price [8]—both lower upfront prices of very small pouches and lower price per gram of larger pouches. Regulating the size of this more affordable alternative to FM cigarettes is crucial, as is reducing the affordability of this form of tobacco through taxation to close the gap between FM cigarettes and loose tobacco.

While agreeing that size matters, Cummings [5] hypothesizes that setting a far larger minimum size—100 rather than 20—may be more effective, as it would reduce affordability. This proposal is supported by existing evidence [9]: reducing affordability through taxation is a core component of effective tobacco control policies to ensure frequent real price increases. However, there is arguably a tension between making pack sizes larger and smokers' self-reports that they regulate their consumption by selecting smaller packs [10,11].

The need to understand the mechanism by which pack size impacts selection and consumption is highlighted by Willemsen and Steenhuis [4]. Their suggestions for testing possible mechanisms, based on the more developed literature of how portion size affects food consumption, are valuable avenues to pursue, alongside experimental studies examining the nature of the relationship between pack size and consumption.

The competing demands of affordability and self-regulation of consumption demonstrate the need for further

research to identify the 'optimal' pack size, as argued by Farrell [7] and Willemsen and Steenhuis [4]. The 'optimal' number of cigarettes to purchase or to have available to reduce consumption may differ depending on the target group—be it young people not yet smoking, smokers who do not want to quit or ex-smokers. Regulation will need to achieve a compromise between these competing factors and complement non-regulatory approaches similar to those proposed by Farrell [7].

Taking into account all these suggestions, one regulatory approach would be to require:

- i cigarettes to be sold only in large cartons containing a standard 100 cigarettes in order to eliminate price-related promotion, to make all cigarette products unaffordable to teenagers and to discourage impulse purchasing by smokers in the process of quitting;
- ii these cigarettes to be packaged as bundles of 20s so that no single pack is too affordable or so large as to encourage excessive consumption; and
- iii similar arrangements for loose tobacco, with a standard individual pouch size packaged as bundles (e.g. 2×30 -g pouches: 60 g of tobacco is equivalent to approximately 100 FM cigarettes).

Optimizing pack size regulation is a potentially powerful intervention to prevent tobacco companies from circumventing effective tobacco control policies. It is important to also identify and close loopholes that may be exploited, for example by changing pack size dimensions, while supporting smokers to cut down and quit.

As outlined in the commentaries, regulating pack size is just one contribution to the many more needed to increase rates of cessation, which have remained relatively constant over time [12]. Further evidence is needed to determine pack sizes and configurations that would optimally impact smoking and how this can be reflected in broader tobacco control policy to reduce smoking prevalence.

Declaration of interests

None.

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References

1. Blackwell A. K. M., Lee I., Scollo M., Wakefield M., Munafò M. R., Marteau T. M. Should cigarette pack sizes be capped?. *Addiction* 2019; <https://doi.org/10.1111/add.14770>
2. Moodie C., Angus K., Mitchell D., Critchlow N. How tobacco companies in the United Kingdom prepared for, and responded to, standardised packaging of cigarettes and rolling tobacco. *Tob Control* 2018; **27**: e85–e92.
3. Scollo M., Bayly M., White S., Lindorff K., Wakefield M. Tobacco product developments in the Australian market in the 4 years following plain packaging. *Tob Control* 2018; **27**: 580–4.
4. Willemsen M., Steenhuis I. We do not yet understand the psychological mechanisms explaining how cigarette pack size affects smoking, let alone smoking cessation. *Addiction* 2019; <https://doi.org/10.1111/add.14843>
5. Cummings K. M. What's in a number?. *Addiction* 2020; <https://doi.org/10.1111/add.14912>
6. Moodie C., Stead M. The importance of loose tobacco when considering capping pack size. *Addiction* 2020; <https://doi.org/10.1111/add.14921>
7. Farrell L. Are there lessons from gambling control for tobacco control?. *Addiction* 2020; <https://doi.org/10.1111/add.14906>
8. Brown A. K., Nagelhout G. E., van den Putte B., Willemsen M. C., Mons U., Guignard R., *et al.* Trends and socioeconomic differences in roll-your-own tobacco use: findings from the ITC Europe surveys. *Tob Control* 2015; **24**: iii11–iii16.
9. Levy D. T., Chaloupka F., Gitchell J. The effects of tobacco control policies on smoking rates: a tobacco control scorecard. *J Public Health Manag Pract* 2004; **10**: 338–53.
10. Marti J., Sindelar J. Smaller cigarette pack as a commitment to smoke less? Insights from behavioral economics. *PLOS ONE* 2015; **10**: e0137520.
11. Farrell L., Fry T., Harris M. 'A pack a day for 20 years': smoking and cigarette pack sizes. *Applied Econ* 2011; **43**: 2833–42.
12. Royal College of Physicians (RCP). *Nicotine Without Smoke: Tobacco Harm Reduction*. London, UK: RCP; 2016. Available at: <https://www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0> (accessed 20 July 2018).